


What is claimed is:

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1. A method for making a thin-film device, the method comprising:
providing a substrate having a major surface area, the substrate having a first layer on a first surface area of the substrate's major surface area;
depositing second layer onto the first layer, wherein the depositing of the second layer includes energizing the second layer without substantially heating the substrate.
 2. The method according to claim 1, wherein the first and second layers are part of a battery, the method further comprising:
depositing a photovoltaic cell on the battery.
 3. The method according to claim 2, the method further comprising:
attaching an integrated circuit to the substrate; and
operatively coupling the integrated circuit to charge the battery using current from the photovoltaic cell.
 4. The method according to claim 1, wherein the first and second layers are deposited on the substrate while the substrate moves in a continuous motion.
 5. The method according to claim 1, wherein the substrate is a flexible material supplied from a roll, and the first and second layers are deposited on the substrate while the substrate moves in a continuous motion.
 6. The method according to claim 1, wherein the first and second layer forms a cathode layer of a battery including the cathode layer; an anode layer, and an electrolyte layer located between and electrically isolating the anode layer from the cathode layer, wherein the anode or the cathode or both include an intercalation material.

7. The method according to claim 1, further comprising depositing an electrical circuit on the battery.

8. The method according to claim 1, wherein the substrate is a rigid material supplied from a cassette, and the first and second layers are deposited on the substrate while the substrate moves in a continuous motion.

9. The method according to claim 1, wherein the substrate is a polymer material having a melting point below about 700 degrees Celsius.

10. The method according to claim 1, wherein the energizing of the second layer includes supplying ions of at least 5eV.

11. A system for making a thin-film device, the system comprising:
- a substrate-supply station that supplies a substrate having a major surface area, the substrate having a first layer on a first surface area of the substrate's major surface area;

a deposition station that deposits a second layer onto the first layer, wherein the deposition station supplies energy to the second layer to aid in layer formation without substantially heating the substrate.

12. The system according to claim 11, wherein the first and second layers are part of a battery, the system further comprising:

a deposition station that deposits a photovoltaic cell on the battery.

13. The system according to claim 12, the system further comprising:

a station that attaches an integrated circuit to the substrate; and

a wiring station that forms conductive paths between the integrated circuit, the battery and the photovoltaic cell.

14. The system according to claim 11, the system further comprising:
a motion device that move the substrate, wherein the first and second layers are deposited on the substrate while the substrate moves in a continuous motion.

15. The system according to claim 11, wherein the substrate is a flexible material supplied from a roll, and the first and second layers are deposited on the substrate while the substrate moves in a continuous motion.

16. The system according to claim 11, wherein the first and second layer forms a cathode layer of a battery including the cathode layer; an anode layer, and an electrolyte layer located between and electrically isolating the anode layer from the cathode layer, wherein the anode or the cathode or both include an intercalation material.

17. The system according to claim 11, further comprising a deposition station that deposits an electrical circuit on the battery.

18. The system according to claim 11, wherein the substrate is a rigid material supplied from a cassette, and the first and second layers are deposited on the substrate while the substrate moves in a continuous motion.

19. The system according to claim 11, wherein the substrate is a polymer material having a melting point below about 700 degrees Celsius.

20. The system according to claim 11, wherein the energizing of the second layer includes supplying ions of at least 5eV.

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21. A system for making a thin-film device, the system comprising:
a substrate-supply station that supplies a substrate having a major surface area, the substrate having a first layer on a first surface area of the substrate's major surface area;
means for depositing a second layer onto the first layer, wherein the means supplies energy to the second layer to aid in layer formation without substantially heating the substrate.

22. A system for making a thin-film device, the system comprising:
a substrate-supply station that supplies a substrate having a major surface area;
a plurality of deposition stations that deposit layers onto the substrate, wherein the deposition station supplies energy to the layer to aid in layer formation without substantially heating the substrate.

23. The system for making a thin-film device of claim 22 wherein the substrate-supply station supplies a continuous plastic sheet.

24. The system for making a thin-film device of claim 22 wherein the substrate-supply station supplies a continuous set of wafers.

25. The system for making a thin-film device of claim 22 wherein the plurality of deposition stations deposit a thin film battery.

26. The system for making a thin-film device of claim 22 wherein the plurality of deposition stations deposits a capacitor.

27. The system for making a thin-film device of claim 22 wherein the plurality of deposition stations deposits a thin film battery and a device powered by the thin film battery.

28. The system for making a thin-film device of claim 22 wherein the plurality of deposition stations deposit a thin film battery and a device powered by the thin film battery, wherein the device is deposited onto the thin film battery.

29. The system for making a thin-film device of claim 22 wherein the plurality of deposition stations deposit a thin film battery and a set of traces for electrically connecting a device to the thin film battery.

30. The system for making a thin-film device of claim 29 further comprising a placement device for placing components onto the traces.

31. The system for making a thin-film device of claim 22 wherein the at least one deposition station deposits an energy-conversion device.